



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,779	10/12/2005	Erwin Janssen	NL030422	2053
24737 7590 05/24/2007 PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510			EXAMINER JEAN PIERRE, PEGUY	
			ART UNIT 2819	PAPER NUMBER
			MAIL DATE 05/24/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/552,779	Applicant(s) JANSSEN ET AL.	
	Examiner Peguy JeanPierre	Art Unit 2819	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 October 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 October 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/12/2005</u>  | 6) <input type="checkbox"/> Other: _____                          |

Application/Control Number: 10/552,779  
Art Unit: 2819

Page 2

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

2. The information disclosure statement filed on 10/12/2005 has been considered.

### ***Drawings***

3. Figures 1A and 1B should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application.
4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the feature of "a gain element when an absolute value of the input signal is larger" or the feature of "a quantizer when an absolute value is smaller" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet,

Application/Control Number: 10/552,779  
Art Unit: 2819

Page 3

and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). The objection to the drawings will not be held in abeyance.

***Specification***

5. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
6. The preferred layout (Background of the Invention, Summary of the Invention, Brief Description of the Drawings, Detailed Description of the Embodiment etc...) is missing.

***Claim Rejections - 35 USC § 112***

7. Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 5 recites "...as a quantizer when an absolute value of a signal input is smaller...when the absolute value of the signal input is greater.". This limitation is broad; it is not clear whether the input signal to the quantizer is compared to the analog input signal of the integrator or to another reference signal. In addition, the limitation of "the absolute value of the input signal to the quantizer" is not adequately described in the specification nor shown in the drawings. Please clarify.

Application/Control Number: 10/552,779  
Art Unit: 2819

Page 4

Claim 1 is also confusing. It is read like if there is one quantizer in the unit. The claims recites in a first instance, that "the at least one device acts as a quantizer when an absolute value of a signal input is smaller" and in a second instance, the claim recites another device "to quantize the output of the unit.". Please clarify.

It is also to be noted that the drawings fail to show the feature of a gain element when an absolute value of the input signal is larger or the feature of a quantizer when an absolute value is smaller.

The claims also recite the configuration of a device which acts as a quantizer when an absolute value of an input signal is smaller and as a gain element when an absolute value of the signal is larger. The configuration of the device as a gain element and/or as a quantizer must be shown to help in understanding the invention. For, the quantizer and the gain element process the signals differently, hence they must be . In addition, it appears that the drawings of the embodiment of the invention comprise the device described in the specification as "Q". When the device acts as a quantizer it is read as if the unit comprises two quantizers: one quantizer for the smaller input and another quantizer for the unit. Is it true?

It is not also easy to distinguish from the drawings when the device acts a gain element or as a quantizer and the specification does not help in this regard. For instance, from the reading of the claims the examiner expects the output signal from the integrator to bypass the quantizer for absolute value of larger input and to bypass the gain element for the absolute value of smaller input.

Application/Control Number: 10/552,779  
Art Unit: 2819

Page 5

An art rejection of the claims as understood by the examiner appears below.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art (APA Figs. 1A, 1B) in view of Melanson (USP 7,081,843).

With regard to claim 1, Fig. 1B of the APA discloses a unit that comprises N integrators in series, the first integrator receives an input signal, a quantizer (12) coupled to quantize the output of the unit. With regard to claims 3-4, 7-8, 15, the signal input of the quantizer is the output of the integrator and each integrator has a weighed feedback path (a1-a5) which can take any values to stabilize the output of the unit. With regard to claims 5-6, 9-12, Figure 1B shows that the signals outputted from the integrators are

Application/Control Number: 10/552,779

Page 6

Art Unit: 2819

weighted, summed, and inputted into the device. With regard to claims 13-14, the modulator of Figure 1 can be used in any electronic devices such as analog to digital converter, a digital to digital converter.

With regard to claims 1-2, and 16, the APA fails to disclose a device that acts as a quantizer when an absolute value of a signal input is smaller and acts as a gain element when an absolute value of the signal input is larger. Melanson discloses in Figure 4 a sigma delta modulator that comprises, a loop integrator that inherently may include a plurality of integrators, the output of the loop filter is switched to either a quantizer or a gain element (see col. 8, lines 28-29) based on the signal output from the loop filter (see col. 4, lines 29-55). The system of Melanson will prevent overload to the quantizer.

Therefore, it would have been obvious to one having ordinary skill in the art to substitute the quantizer with a gain element based on the magnitude of the output of the quantizer or the signal input into the quantizer to provide a stable quantized output signal free of distortion and noise.

### **Conclusion**

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peguy JeanPierre whose telephone number is (571) 272-1803. The examiner fax phone number is (571) 273-1803.

  
Peguy JeanPierre  
Primary Examiner